# GRADE THREE MATHEMATICS: MODULE 8

SPACE AND SHAPE

Home Instructor's Guide: Days 10–18
and
Assignment Booklet 8B
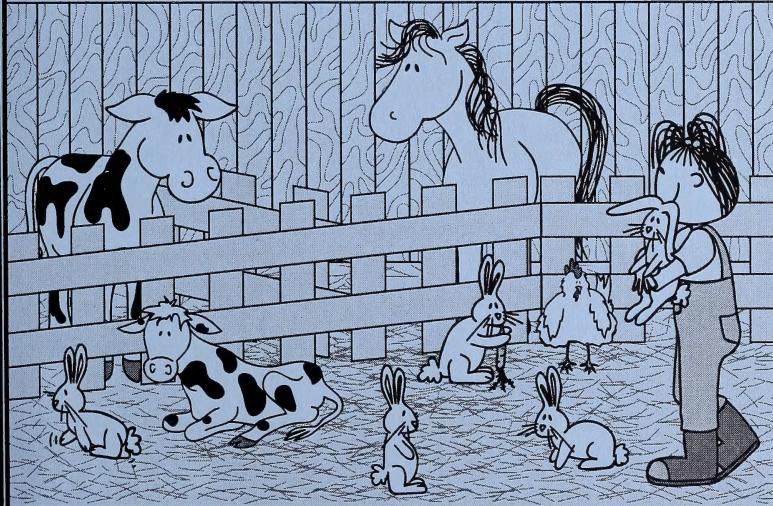
Learning
Technologies
Branch

Alberta
LEARNING

This document is intended for	
Students	✓
Teachers	✓
Administrators	
Home Instructors	✓
General Public	
Other	

INTERNET

You may find the following Internet sites useful:

- Alberta Learning, **http://www.learning.gov.ab.ca**
- Learning Technologies Branch, **http://www.learning.gov.ab.ca/ltb**
- Learning Resources Centre, **http://www.lrc.learning.gov.ab.ca**

The use of the Internet is optional. Exploring the electronic information superhighway can be educational and entertaining. However, be aware that these computer networks are not censored. Students may unintentionally or purposely find articles on the Internet that may be offensive or inappropriate. As well, the sources of information are not always cited and the content may not be accurate. Therefore, students may wish to confirm facts with a second source.

MODULE 8: SPACE AND SHAPE

DAILY SUMMARY

DAY 10: Today, the student learns about parallel, perpendicular, and intersecting lines using 3-D objects. As this may be a difficult concept, your student will need constant support in working through the day's lessons. Ensure the student understands the new concepts before proceeding.

DAY 11: The student learns how to identify and name similarities and differences between geometric solids.

DAY 12: In today's lessons, the student learns how to recognize congruent geometric shapes and solids. Have identical boxes such as toothpaste, jelly powder, tissue, soda cracker, soup, or cereal boxes available for today's lessons. If you do not have two identical boxes, make additional rectangular prisms from the net in the Appendix of the Student Module Booklet.

DAY 13: The student learns the four main directions of the compass (north, east, south, west), how to identify and name them, and how the directions relate to maps. In lesson 2, show how the phrase indicates the directions (in a clockwise order). Explain that the directions are usually the same on all maps.

There is no assignment in the Assignment Booklet for Day 13.

DAY 14: The student learns how to trace a path following oral and written directions.

Multiplication number facts are also practised in this lesson. Take some time to compare the results on this exercise to some of the student's earlier number facts pages. How much improvement do you see? Do you and the student need to spend extra time practising multiplication facts? Discuss the strategies the student uses most often. Spend a few minutes each day working on multiplication problems the student is having difficulty with.

DAY 15: The student learns how to graph number points on horizontal and vertical number lines.

DAY 16: In today's lessons, the student estimates, reads, and records temperature.

Make the thermometer in the Appendix of the Student Module Booklet before the start of the class. Staple or tape a length of white ribbon to red ribbon at one end. Insert the half-red-and-half-white ribbon through slits at the bottom and top of the thermometer. This will provide a sliding temperature marker.

There is no assignment in the Assignment Booklet for Day 16.

DAY 17: The focus is on relating temperature to everyday situations. Have a real (alcohol-type) thermometer on hand for the student to read. Inexpensive wall thermometers can be purchased at you local hardware store. It is not a good idea to use a mercury thermometer in case of breakage.

It is important that you guide your student through the activities using the thermometer and any hot liquids.

DAY 18: The concepts that were introduced in this module are reviewed in the Assignment Booklet activities. You may want to revisit lessons or reteach any skills that your student has not yet mastered.

After the student has completed today's activities and assignments, have the student complete the Student's Checklist and Student's Comments. The student may work on these alone or with your help. Complete the Home Instructor's Checklist and add any comments that may be helpful.

Submit Assignment Booklet 8B to the teacher.

ASSIGNMENT BOOKLET 8B

Grade Three Mathematics
Module 8: Days 10–18

Home Instructor's Comments and Questions

_____

Home Instructor's Signature

FOR SCHOOL USE ONLY

Assigned Teacher:

_____

Date Assignment Received:

_____

Grading:

_____

Additional Information:

_____

_____

_____

_____

_____

_____

FOR HOME INSTRUCTOR USE
(if label is missing or incorrect)

Student File Number:

_____

Date Submitted:

_____

Apply Module Label Here

Name

Address

Postal Code

Please verify that preprinted label is for correct course and module.

Teacher's Comments

_____

Teacher's Signature

Home Instructor: Keep this sheet when it is returned to you as a record of the student's progress.

INSTRUCTIONS FOR SENDING IN THIS
DISTANCE LEARNING ASSIGNMENT BOOKLET

When you register for distance learning courses, you are expected to send in Assignment Booklets for corrections regularly. Try to send each Assignment Booklet as soon as you have completed it. Before sending your Assignment Booklet, please check the following:

- Are all the assignments completed? If not, explain why.
- Has your work been reread to be sure the spelling and details are correct?
- Is the record form filled out and the correct module label attached?

MAILING

1. **Postage Regulations**

   Do **not** enclose letters with Assignment Booklets.

   Send all letters in a separate envelope.

2. **Postage Rates**

   Take your Assignment Booklet to the post office and have it weighed. Attach enough postage and seal the envelope. Assignment Booklets will travel faster if correct postage is used and if they are in large envelopes that are no more than two centimetres thick.

FAXING

1. Assignment Booklets may be faxed. Contact your teacher for the fax number.

2. All faxing costs are the responsibility of the sender.

E-MAILING

Assignment Booklets may be e-mailed. Contact your teacher for the e-mail address.

Grade Three Mathematics
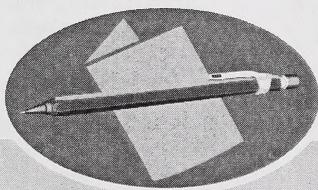
Module 8

Space and Shape
ASSIGNMENT BOOKLET 8B

Alberta
LEARNING

Grade Three Mathematics
Module 8: Space and Shape
Assignment Booklet 8B
Learning Technologies Branch

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1. Look at the lines shown in bold in the drawings below.
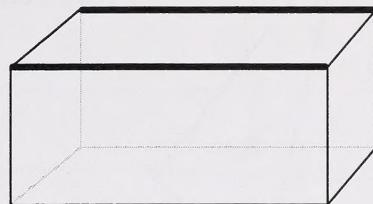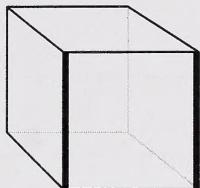
What kind of lines do the bolded lines indicate?

_____

2. What kind of lines do these bolded lines indicate?

_____
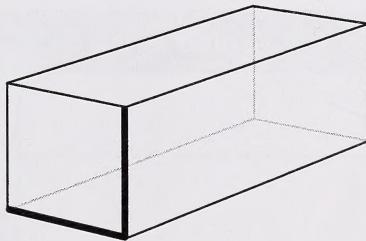
3.
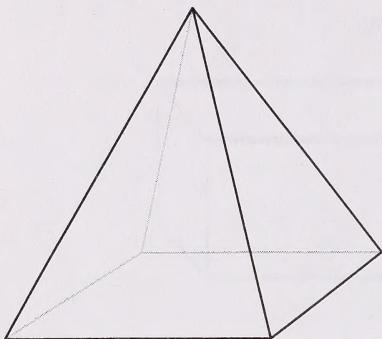
With a red crayon mark two lines that are parallel in this solid.

4.
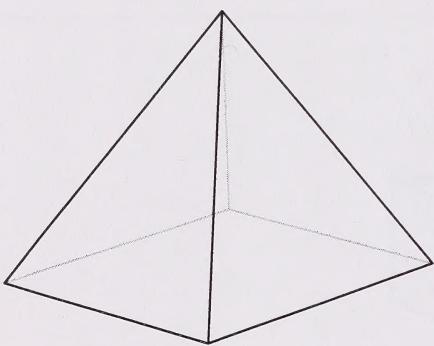
With a red crayon mark two lines that are perpendicular in this solid.

1. What does it mean when you are asked to compare and contrast two things or objects?

_____

_____

_____

_____

2. Compare and contrast a **cone** and a **triangular prism** by filling in the chart.
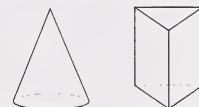
	Cone	Triangular Prism
Number of faces		
Shape of face(s) ☐☐○△		
Shape of base(s) ☐☐○△		
Number of vertices		
Number of edges		
Are there parallel lines?		
Are there perpendicular lines?		
Are there intersecting lines?		

1. What does congruent mean?

_____

_____

_____

_____

Look carefully at the lines in the box. Then answer questions 2 and 3.

a. _____   g. _____

b. _____   h. _____

c. _____   i. _____

d. _____   j. _____

e. _____   k. _____

f. _____   l. _____

2. What is the best way to find out which pairs of lines are congruent?

_____

3. Find the six congruent pairs. Write the letters of each pair of congruent lines.

_____   _____   _____

_____   _____   _____

Study the map. Then answer questions 1 to 3.
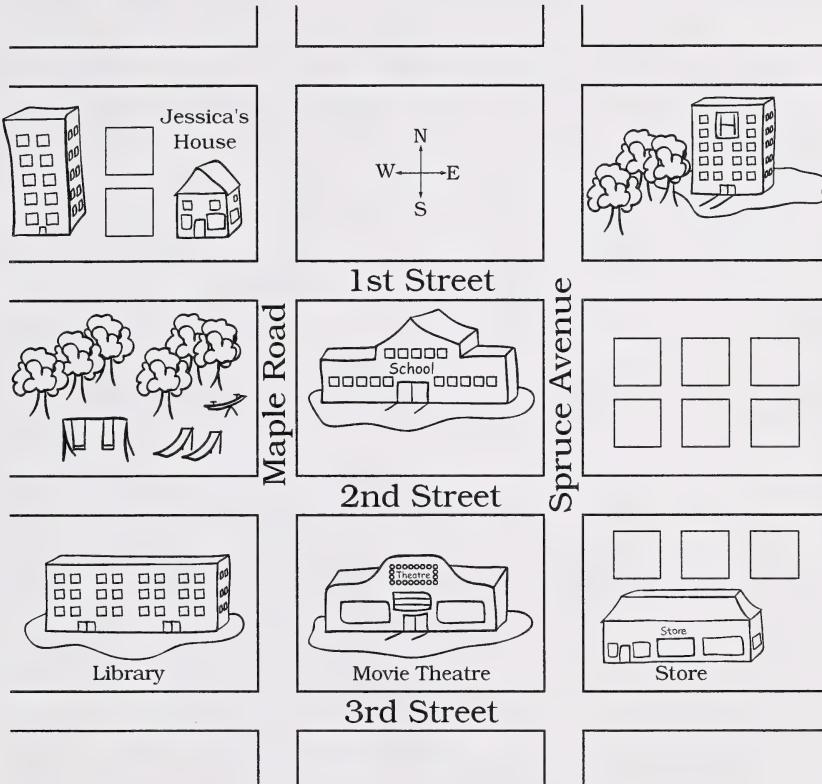
1. Explain how Jessica can get from her house to the store.

_____

_____

_____

_____

_____

2. Jessica goes home along the same path she used to get to the store. Explain how Jessica got home from the store.

_____

_____

_____

_____

_____

_____

3. How do the directions in question 2 differ from the directions in question 1?

_____

_____

1. Rob is 8 years old. His older sister, Samia, is 15 years old and his baby brother, Gareth, is 2 years old.

   Graph Rob's, Samia's, and Gareth's ages on the number line below. Make a red dot on the number line for each of the ages.

```
◄──┼───┼───┼───┼───┼───┼───┼───┼───┼───┼───┼───┼───┼───┼───┼──►
   0   2   4   6   8  10  12  14  16  18  20  22  24  26  28  30
```
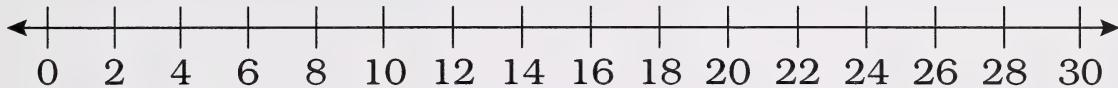
2. The temperature is 10 degrees today. Put a green circle around the temperature on the vertical number line.

```
        15 ┼
        14 ┼
        13 ┼
        12 ┼
        11 ┼
        10 ┼
         9 ┼
         8 ┼
         7 ┼
         6 ┼
         5 ┼
         4 ┼
         3 ┼
         2 ┼
         1 ┼
         0 ┼
```
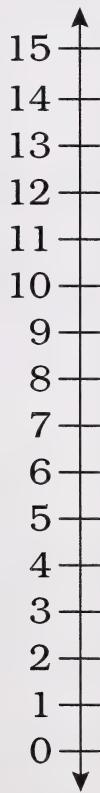
Fill in the blanks with the correct answer. Don't forget to write the temperature in degrees Celsius, or °C.

1. When you heat water and it comes to _____, you can cook an egg or make tea.

2. When you're watching a movie at home, a comfortable temperature is about

   _____.

3. If you want to make an ice-skating rink in your back yard, the temperature has to

   be _____ or lower.

4. It's time to call the doctor if you're running a very high fever. That means your

   body temperature is _____ than 37°C.

Fill in the circle that shows the **best** answer to each of the following questions.

5. Lucy and Michael looked at their outdoor thermometer. They knew it was a perfect day to go ice skating. What temperature did the thermometer show?

   ○ 17°C
   ○ −7°C
   ○ −42°C
   ○ 27°C

6. Sidney wanted to go swimming in the outdoor pool. Her father told her he would take her because it was a good day for it. What was the temperature outside?

   ○ 10°C
   ○ −7°C
   ○ −42°C
   ○ 27°C

1. Look at this ice-cream cone. What geometric solids make up this ice-cream cone?

○ sphere and a pyramid
○ cone and a cube
○ sphere and a cone
○ triangular prism and a sphere

2. I have 2 faces, 2 edges, and 0 vertices. What am I?

○ rectangular prism
○ cone
○ triangular prism
○ cylinder

3. a. Draw a geometric figure with 6 faces, 12 edges, and 8 vertices.

b. Name the figure. _____

4. Look at this solid.
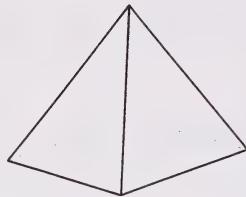
    a. How many faces are there? _____

    b. How many edges are there? _____

    c. How many vertices are there? _____

    d. What shape is the base? _____

    e. What is the name of this solid? _____

    f. Draw each face of this solid.

```



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5. a. What shapes are the faces in this prism?

      ○ rectangles and triangles
      ○ rectangles and squares
   ○ triangles and circles
      ○ triangles and a square
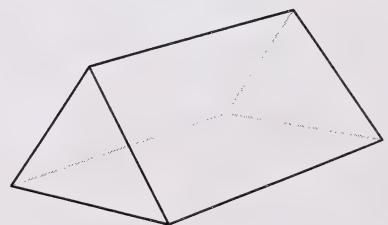
    b. Name the prism. _____

6. A pyramid has 4 triangular faces. What is the shape of the base?

   ○ rectangle
   ○ triangle
   ○ square
   ○ circle

7. The following net will make a box. When the box is made, which picture is on the side opposite the star?

   ○ ●

   ○ ▢

   ○ ✚

   ○ ■
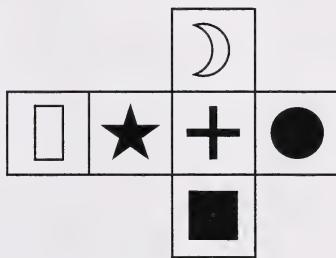
8. The lines in bold are

   ○ perpendicular
   ○ curved
   ○ parallel
   ○ intersecting
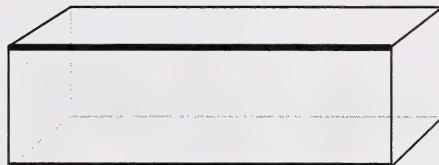
9. With a green crayon, trace a pair of perpendicular lines on this cube.
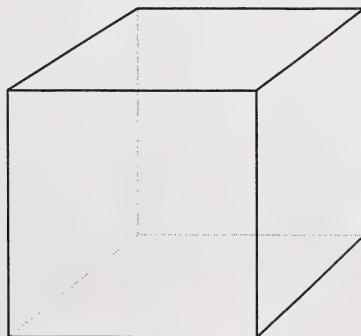
10. Look at the pictures of the table and the door.

   a. List 2 ways the table and door are similar geometric solids.

   _____

   _____

11. Which fruits are in boxes that have congruent shapes?
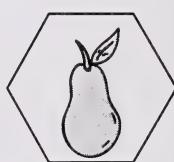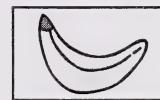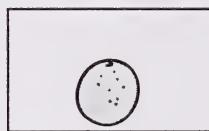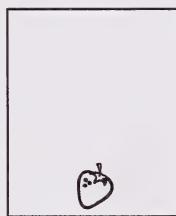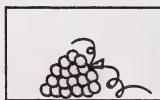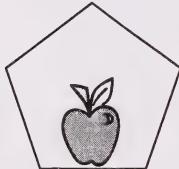
   ○ pear and apple
   ○ strawberry and orange
   ○ banana and orange
   ○ grapes and banana

Use this map of the park to answer questions 12 and 13.
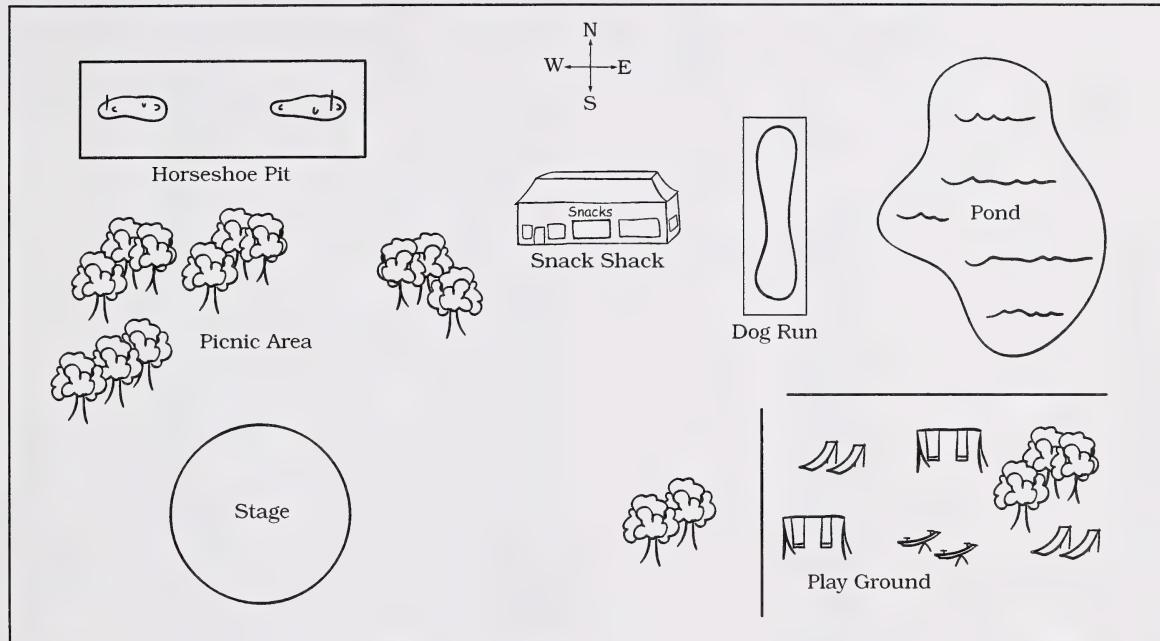

12. Evan walked from the Snack Shack to the dog run. In which direction did he walk?

   ○ north
   ○ east
   ○ south
   ○ west

13. With a purple crayon, trace the path on the map following these directions:

   a. Start at the north end of the pond.
   b. Go west and continue past the Dog Run. Turn south.
   c. Continue past the Snack Shack until you get to the playground.
   d. Turn west until you get to the stage.
   e. Turn north and continue past the picnic area until you get to the horseshoe pit.

14. Using red dots, graph the points 3, 8, and 14 on both number lines that follow:

a.

```
<|++++++++++++++++++++++++++++++++++++++++>
  0              10              20              30
```

b.

```
      ^
      |
      +
      +
      +
      +
      +
   9 -+
      +
      +
   6 -+
      +
      +
   3 -+
      +
      +
   0 -+
      |
      v
```
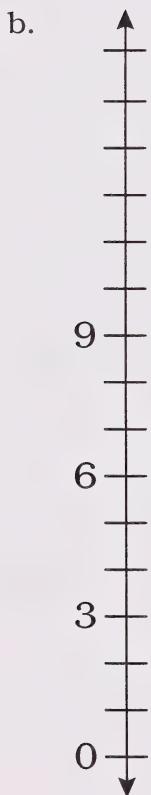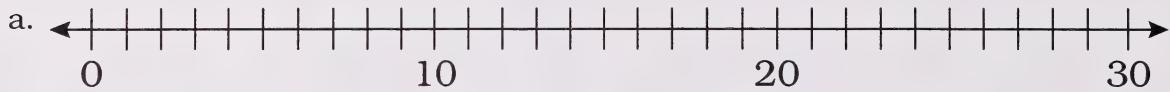
15. The water in the swimming pool is 28 degrees Celsius. Fill in the circle of the thermometer that shows a temperature of 28 degrees Celsius.

   ◯ a.   ◯ b.   ◯ c.   ◯ d.
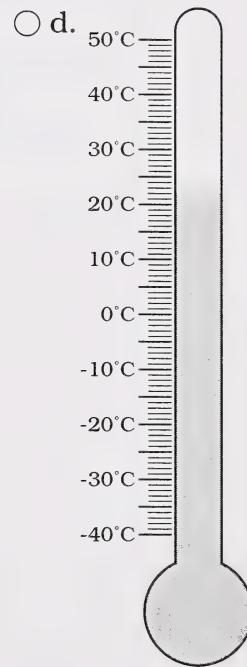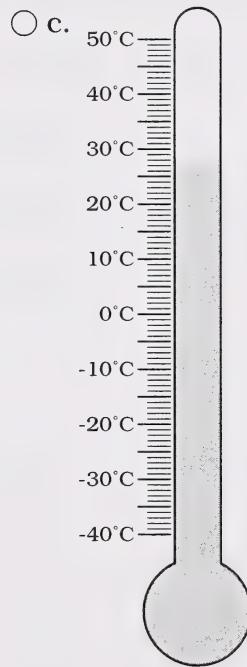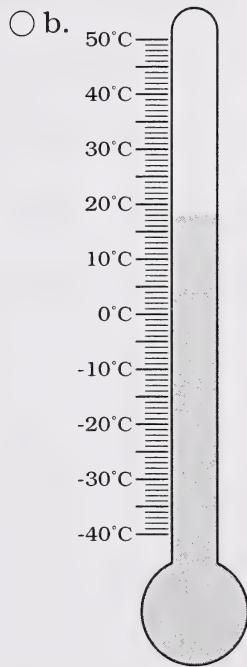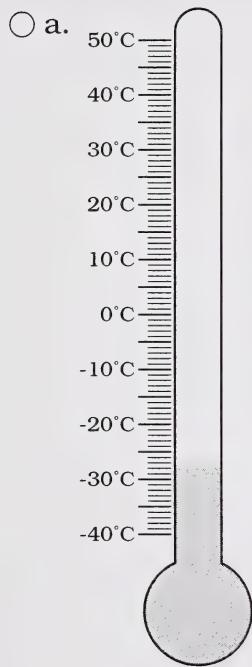
16. When Ryan and his family came home from watching a hockey game, the house felt cold inside. His mother turned up the thermostat. What temperature did she turn it to so that the house would be comfortable?

◯ 10°C
◯ 28°C
◯ 20°C
◯ 2°C

Go to your Student Module Booklet and find the Math Facts Graph for this module.

17. a. On the lines, write how many number facts you completed on each day.

Day 2 _____   Day 5 _____   Day 8 _____

Day 11 _____   Day 14 _____   Day 17 _____

b. Display the data on the graph.

Number Facts I Completed

Day 17

Day 14

Day 11

Day 8

Day 5

Day 2

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Number Facts Completed
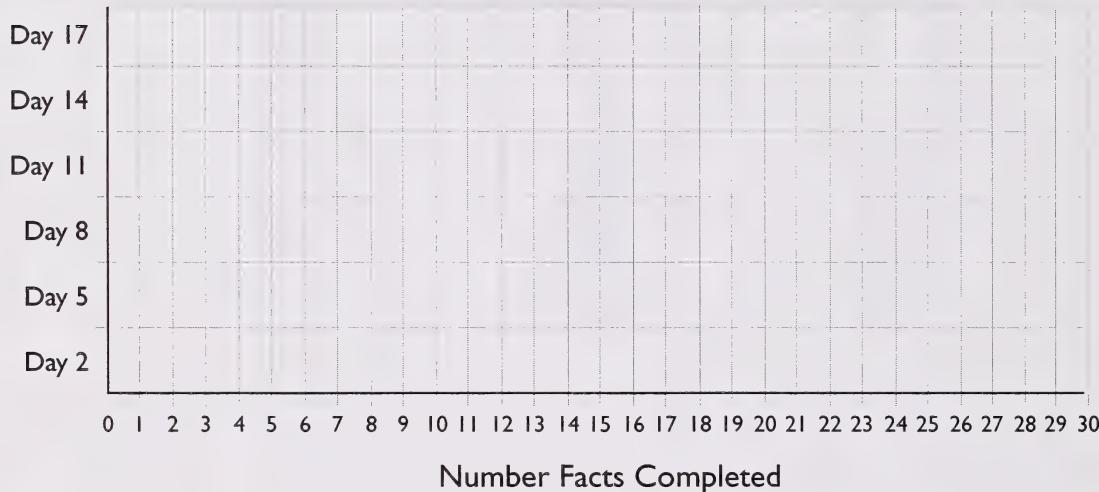
c. On the lines, write how many number facts you got right each day.

Day 2 _____   Day 5 _____   Day 8 _____

Day 11 _____   Day 14 _____   Day 17 _____

d. Display the data in the following graph.

Number Facts That Were Correct

Day 17	
Day 14	
Day 11	
Day 8	
Day 5	
Day 2	

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Number Facts Correct
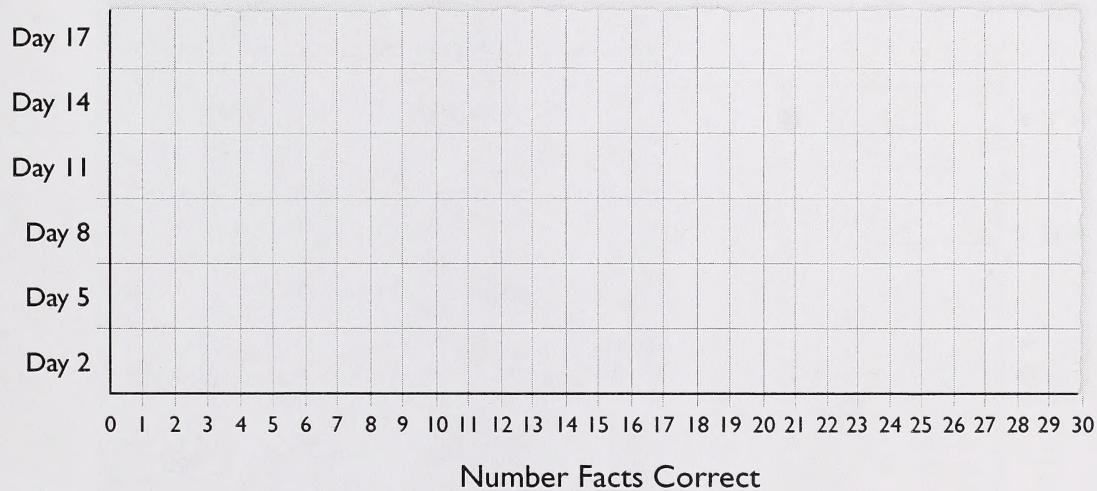
Timed exercise: 2 minutes

Ask your home instructor to time you for 2 minutes. Do as many questions as you can in two minutes. Write how many you completed.

$8 \times 5 =$ _____ $5 \times 2 =$ _____ $2 \times 9 =$ _____ $3 \times 6 =$ _____

$3 \times 9 =$ _____ $8 \times 1 =$ _____ $6 \times 6 =$ _____ $8 \times 6 =$ _____

$7 \times 7 =$ _____ $6 \times 4 =$ _____ $7 \times 5 =$ _____ $3 \times 3 =$ _____

$7 \times 3 =$ _____

4	1	7	9	0	5
$\times 8$	$\times 3$	$\times 2$	$\times 4$	$\times 6$	$\times 6$

4	5	6	5	9	4
$\times 3$	$\times 4$	$\times 7$	$\times 8$	$\times 5$	$\times 4$

Number completed	
Number correct	

STUDENT'S CHECKLIST
MODULE 8: DAYS 10 TO 18

I can ...	Put a check mark beside the things you can do.
name perpendicular, parallel, and intersecting lines on 3-D objects	
compare and contrast two 3-D objects	
pick out congruent (identical) shapes and objects	
show which is north, east, south, and west in a room and on a map	
trace a path to follow directions	
graph numbers on a number line	
estimate, read, and record temperatures	
name a temperature that is right for different activities	

STUDENT'S COMMENTS

The part I enjoyed most in the module was _____

_____

_____

Something new I learned in this part of the module was _____

_____

HOME INSTRUCTOR'S CHECKLIST

Check **yes** or **not yet** for each question.

Can the student do the following?

- refer to perpendicular, parallel, and intersecting lines on 3-D objects ❑ yes ❑ not yet

- compare and contrast two 3-D objects ❑ yes ❑ not yet

- recognize congruent (identical) 3-D objects and 2-D shapes ❑ yes ❑ not yet

- communicate and apply terms of direction, such as north, east, south, and west, and relate directions to maps ❑ yes ❑ not yet

- graph whole number points on a horizontal or vertical number line ❑ yes ❑ not yet

- trace a path, using oral or written instructions ❑ yes ❑ not yet

- estimate, read, and record temperature to the nearest degree ❑ yes ❑ not yet

- relate temperature to everyday life ❑ yes ❑ not yet

HOME INSTRUCTOR'S COMMENTS

_____

_____

_____